

WHAT IS CLAIMED IS:

1. A polysaccharide fiber, comprising: a polymer comprising hexose units wherein at least 50% of the hexose units are linked via an $\alpha(1\rightarrow3)$ glycoside linkage, said polymer having a number average degree of polymerization of at least 100.
2. The polysaccharide fiber of Claim 1 wherein substantially all of the hexose units are linked via an $\alpha(1\rightarrow3)$ glycoside linkage.
3. The polysaccharide fiber of Claim 1 wherein the polymer is poly($\alpha(1\rightarrow3)$ -D-glucose).
4. The polysaccharide fiber of Claim 1 wherein the fiber has a tensile strength of at least 1 gram per denier.
5. A process for producing a polysaccharide fiber, comprising the steps of: dissolving a sufficient amount of a polymer comprising hexose units wherein at least 50% of the hexose units are linked via an $\alpha(1\rightarrow3)$ glycoside linkage in a solvent or in a mixture comprising a solvent to form a liquid crystalline solution; and spinning a polysaccharide fiber from said liquid crystalline solution.
6. The process of Claim 5 wherein substantially all of the hexose units are linked via an $\alpha(1\rightarrow3)$ glycoside linkage.
7. The process of Claim 6 wherein prior to dissolving, the polymer is derivatized.
8. The process of Claim 7 wherein the polymer is acetylated.
9. The process of Claim 8 wherein the derivatized polymer is a poly($\alpha(1\rightarrow3)$ -D-glucose acetate).
10. The process of Claim 8 further comprising contacting the polysaccharide fiber with an excess of a saponification or hydrolysis medium to form a regenerated polysaccharide fiber.
11. The process of Claim 5 wherein the solvent is selected from the group consisting of: an organic acid, an organic halide, a fluorinated alcohol, and mixtures thereof.
12. The process of Claim 5 wherein the solution has a solids content of at least 10%.
13. The process of Claim 12 wherein the solids content ranges from about 20 to about 35%.
14. A liquid crystalline solution, comprising: a solvent and an amount sufficient to form liquid crystals of a polymer comprising hexose units wherein at least 50% of the hexose units are linked via an $\alpha(1\rightarrow3)$ glycoside linkage.
15. The liquid crystalline solution of Claim 14 wherein substantially all of the hexose units are linked via an $\alpha(1\rightarrow3)$ glycoside linkage.
16. The liquid crystalline solution of Claim 14 wherein the polymer is poly($\alpha(1\rightarrow3)$ -D-glucose acetate).

17. The liquid crystalline solution of Claim 14 wherein the solvent is selected from the group consisting of: an organic acid, an organic halide, a fluorinated alcohol, and any combination thereof.

5 18. The liquid crystalline solution of Claim 14 wherein the amount of polymer provides a solids content of at least 10%.